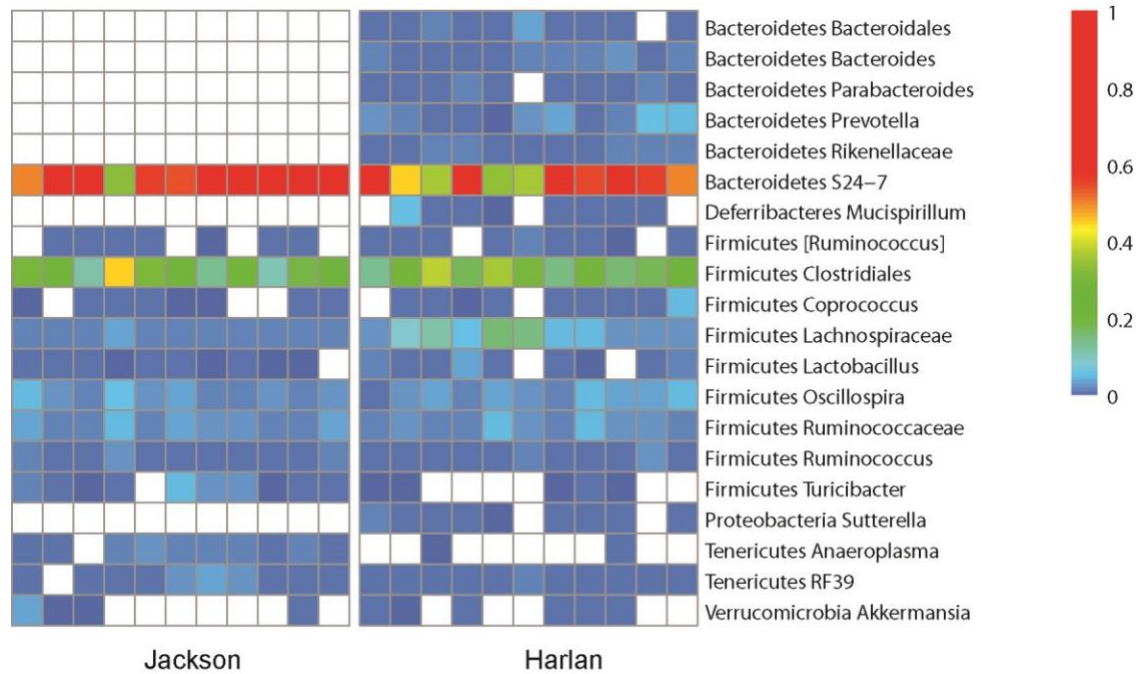
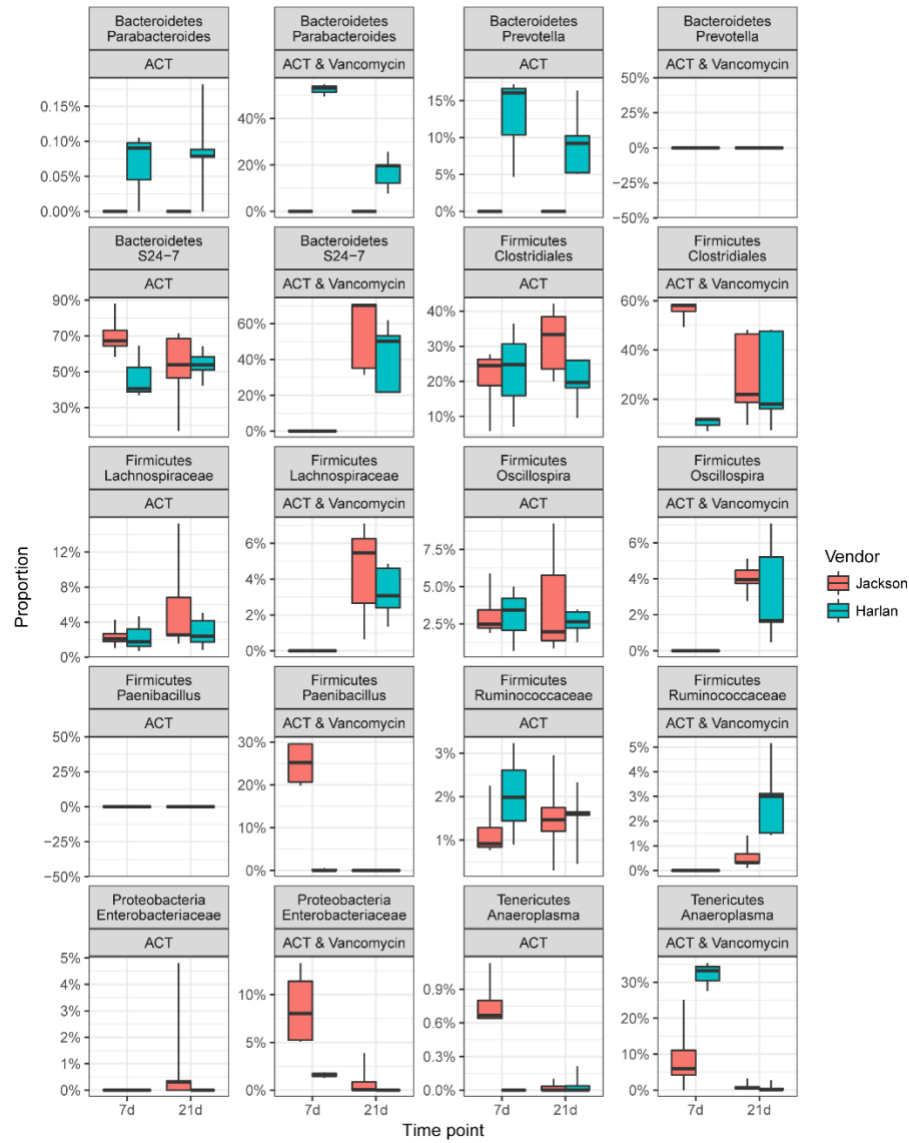


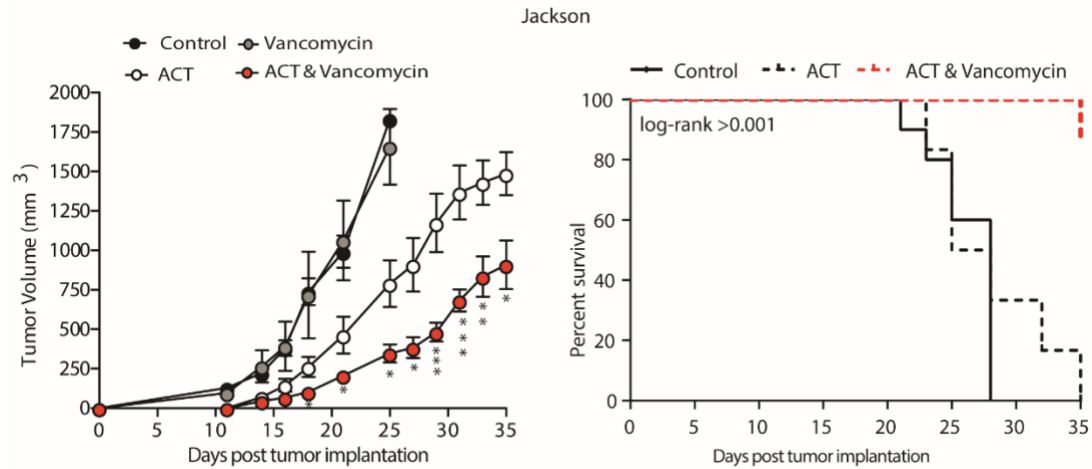
Supplementary Materials



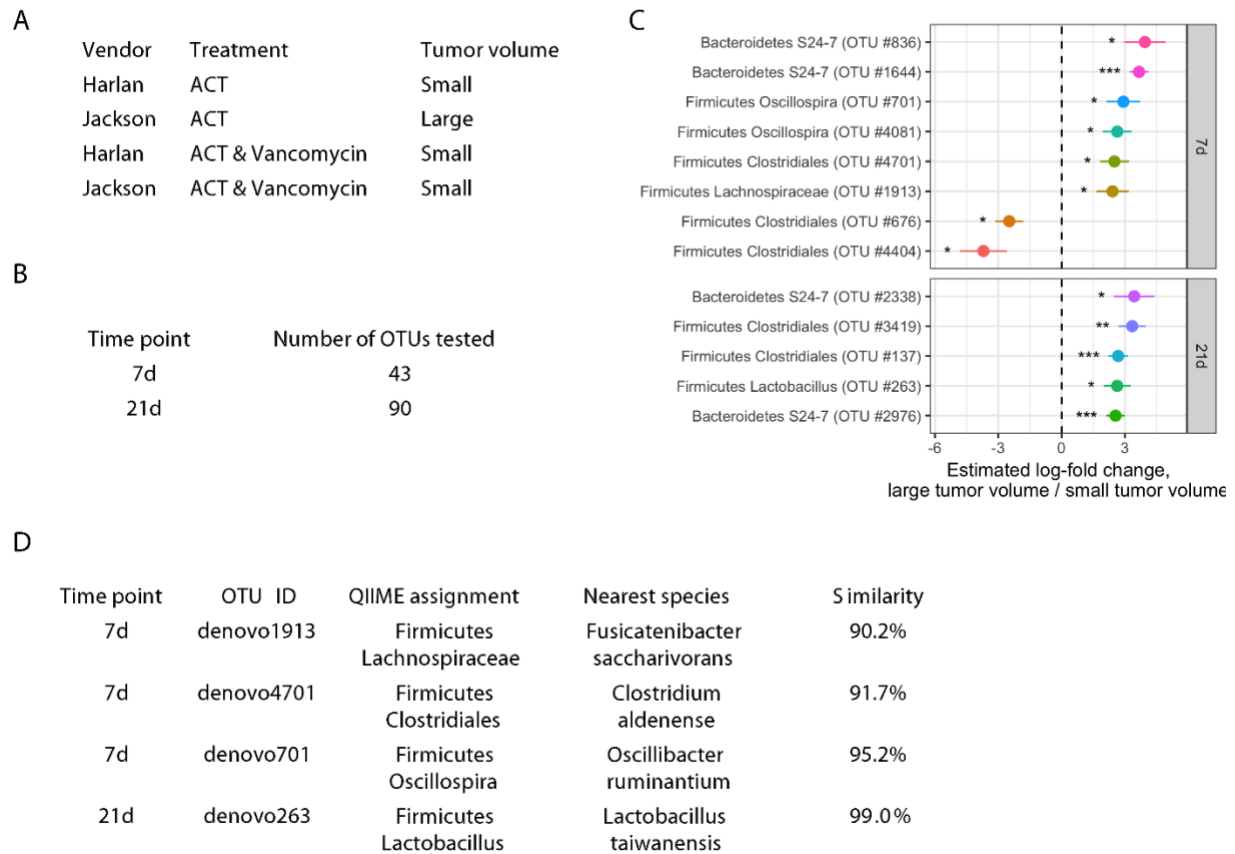
Supplementary figure 1. Taxonomic representation summarized at genus level. Fecal microbiota from a separate set of Jackson and Harlan mice prior to irradiation. A taxon was included in the figure if it was collected more than 25 sequence reads over all samples in the experiment. White squares represent taxa not detected in the sample.



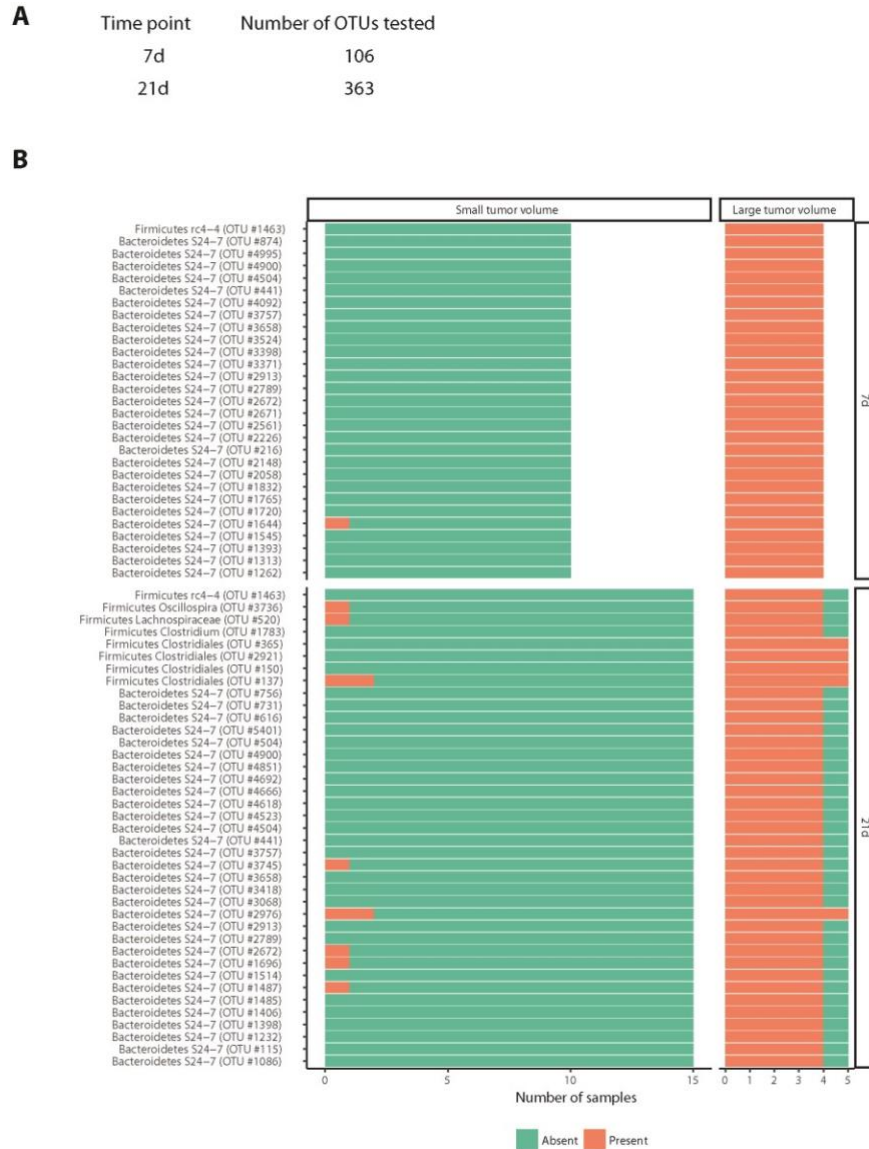
Supplementary figure 2. Proportion of top 10 most abundant bacterial taxa in the ACT and ACT & vancomycin treatment groups.



Supplementary figure 3. (A) Impact of ACT in combination with vancomycin on tumor growth in mice obtained from Jackson for 35 days. Data are means \pm SEM. * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$. (B) Kaplan–Meier survival plots compared by the log-rank test for ACT vs ACT & Vancomycin groups.



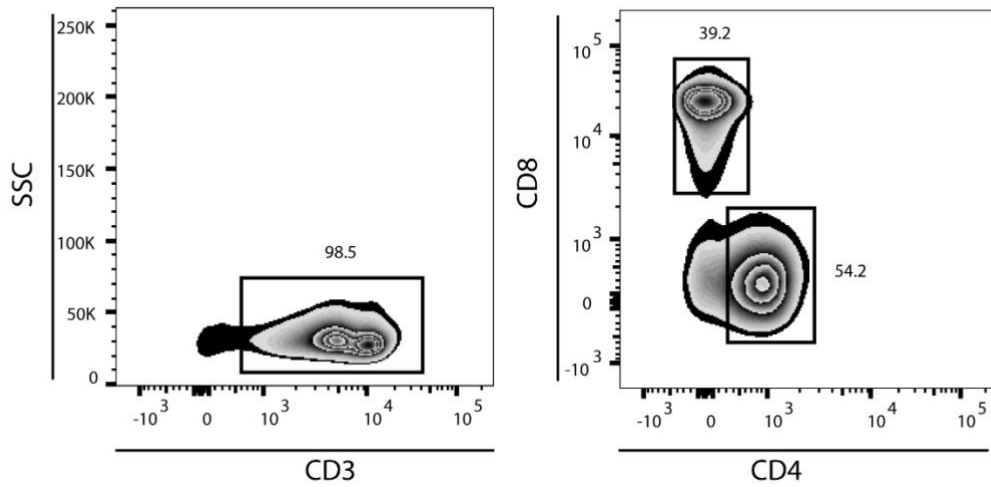
Supplementary figure 4. Analysis of bacterial taxa abundances associated with tumor growth. A) Tumor volume outcomes in Harlan and Jackson mice in both treatment groups. B) Number of OTUs tested at each time point for association with tumor volume using generalized linear models. C) Generalized linear mixed-effects model results for OTUs associated with tumor volume outcome. The mouse ID was included as a random effect in the model. A positive estimate indicates that the OTU abundance was increased for Jackson mice receiving ATCT alone (increased tumor volume), relative to the other vendor/treatment combinations. D) Nearest-matching species for OTUs associated with tumor volume outcome in generalized linear model results. OTUs with >90% similarity to the nearest species type strain are shown. * significant at False Discovery Rate (FDR) threshold of 5% ** FDR<1%, *** FDR<0.1%.



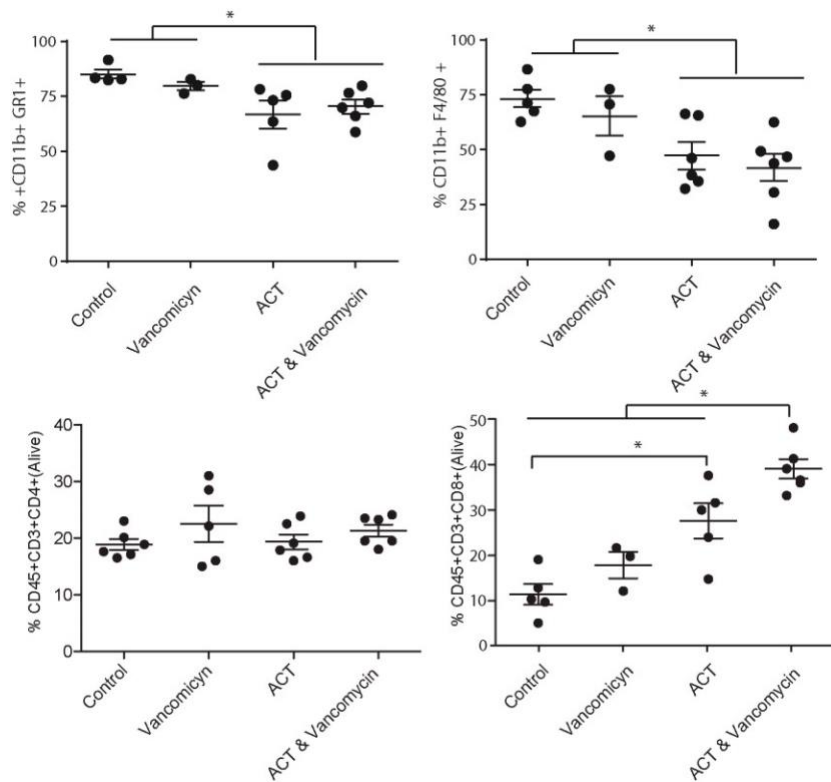
C

| Time point | OTU ID | QIIME assignment | Nearest species | Similarity |
|------------|------------|----------------------------|------------------------------|------------|
| 21d | denovo1783 | Firmicutes Clostridium | Clostridium saccharogumia | 99.2% |
| 21d | denovo3736 | Firmicutes Oscillospira | Clostridium viride | 94.8% |

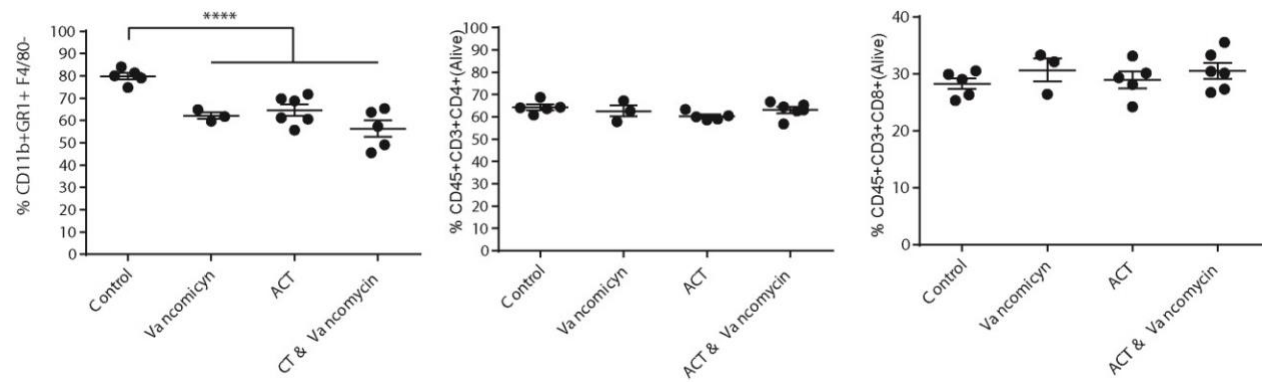
Supplementary figure 5. Analysis of taxon presence/absence associated with tumor growth. A) Number of OTUs tested at each time point for association with tumor volume outcome using Fisher's exact test. B) OTUs found to be associated with tumor volume outcome in tests of presence/absence. OTUs shown were significant at a False Discovery Rate threshold of 5%. C) Nearest-matching species for OTUs associated with tumor volume outcome in presence/absence tests results. OTUs with > 90% similarity to the nearest species are shown.



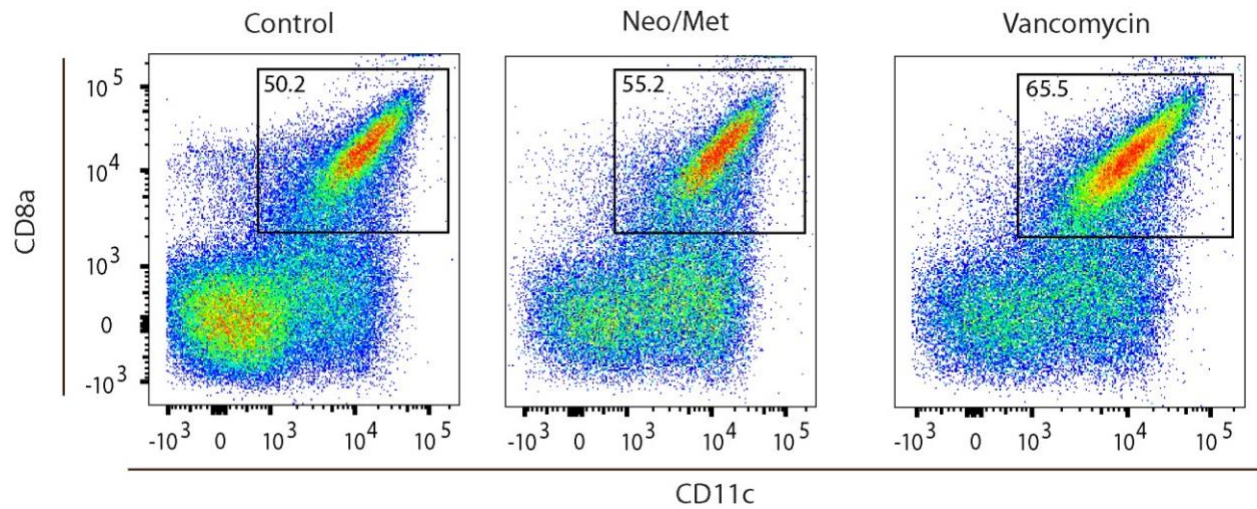
Supplementary figure 6. Characterization of CD4⁺ and CD8⁺ T cells after in vitro polarization. 5×10^6 cells/mL were seeded into 24 well-plate, previously coated with mouse anti-CD3 antibody, with Th1 polarizing media, composed by rmIL-12 (3.3 ng/mL) and mouse anti-IL-4 (10 μ g/mL). On the second day of culture, T cells were split and rmIL-2 (0.6 ng/mL) was added to the polarizing media. After 3 days of polarization in vitro, 5×10^6 T cells were adoptively transferred via intravenous (IV).



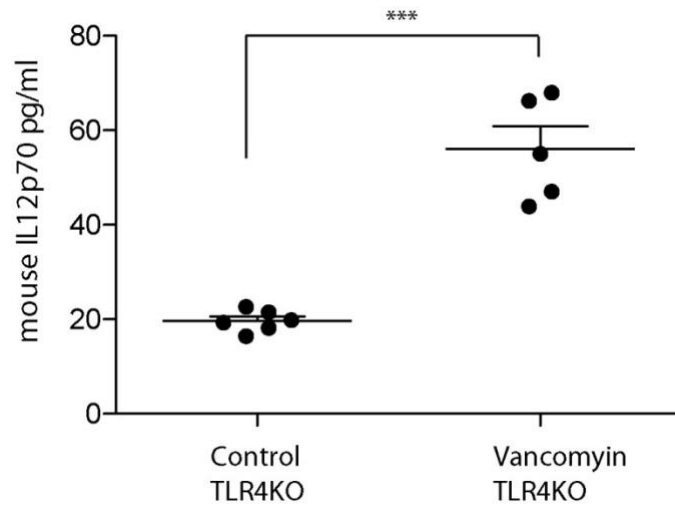
Supplementary figure 7. Analysis of immune cell subsets in tumor. Cell population gated on Alive and CD45+ cells. Each dot represents a mouse, 3 to 6 mice per group. Bars show means from one representative experiment out of three +/- SEM. * $P < 0.05$.



Supplementary figure 8. Analysis of immune cell subsets in spleen. Cell population gated on Alive/CD45+ cells. Each dot represents a mouse, 3 to 6 mice per group. Means and \pm SEM is shown from one representative experiment out of three. * $P < 0.05$.



Supplementary figure 9. Representative density plot of CD8+ DC on spleen from mice not treated (controls), treated with Neo/Met or vancomycin. Cells were gated on CD11c+CD11b-B220- population. Numbers in boxes indicate percentage of cells shown.



Supplementary figure 10. Mouse IL-12p70 levels in serum collected from Jackson TLR4KO mice treated in the presence or absence of vancomycin. IL-12p70 protein was measured by ELISA. Representative of 2 independent experiments with 5 mice per group. Data are means \pm SEM. *** $P < 0.001$.

| | Vancomycin (N=21) | No Vancomycin (N=24) |
|-----------------------------------|-------------------|----------------------|
| Median age (range) | 61 (28 – 73) | 53 (24 – 67) |
| Males, n (%) | 11 (52) | 13 (54) |
| Myeloablative conditioning, n (%) | 12 (57) | 17 (71) |

Table 1. Basic characteristics from the cohort of patients undergoing allogeneic hematopoietic cell transplantation for hematologic malignancies.